

WHAT IS CLAIMED IS:

1. An aqueous urethane polyol, comprising a hydroxyl group, a urethane group and a hydrophilic group in a molecule, wherein:

an average number of hydroxyl groups is 3 to 20;

a hydroxyl value is 10 to 200 (mg KOH/g);

an equivalent ratio of (urethane group) / (hydroxyl group + hydrophilic group) is 1 to 2; and

a number average molecular weight is 1,000 to 20,000.

2. The aqueous urethane polyol in accordance with claim 1, wherein the average number of hydroxyl groups is 6 to 20.

3. A method for producing the aqueous urethane polyol in accordance with claim 1, comprising reacting:

(a) a polyisocyanate derived from at least an aliphatic and/or an alicyclic diisocyanate, having:

an average number of isocyanate groups of 3 to 20;

a concentration of isocyanate group of 3 to 25% by weight;

a concentration of diisocyanate monomer of 3% by weight or less; and

a number average molecular weight of 600 to 19,000;

(b) a polyol; and

(c) a compound comprising an active hydrogen

group and a hydrophilic group in a single molecule;
at an equivalent ratio of (hydroxyl group of (b) +
active hydrogen group of (c)) / (isocyanate group of
(a)) > 1.

4. The production method in accordance with
claim 3, wherein the number average molecular weight of
the polyisocyanate is 900 to 19,000.

5. The production method in accordance with
claim 3, wherein the average number of isocyanate groups
of the polyisocyanate is 6 to 20.

6. The production method in accordance with any
one of claims 3 to 5, wherein the polyisocyanate is
derived from an aliphatic and/or an alicyclic
diisocyanate and polyol.

7. An aqueous coating composition, comprising
the aqueous urethane polyol in accordance with claim 1
or claim 2.

8. The aqueous coating composition in accordance
with claim 7, which is for an aqueous coating as primer
for automobiles.

9. A method for using the aqueous urethane
polyol in accordance with claim 1 or claim 2 as an
aqueous coating as primer for automobiles.